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ABSTRACT

Recent research on motivation and education has focused on the psychological environment of the classroom. Special consideration has been given to perceived stresses on goals, purposes, and meanings of learning activities and the relationships of these to motivation and achievement. The study summarized in this paper builds on this work, especially on the conceptualization of a psychological environment. Taking advantage of an extensive student achievement study conducted in association with a statewide assessment program, researchers surveyed over 16,000 students in 4 different grade levels in 820 Illinois schools regarding perceptions of school goal stresses ("school culture"). Their responses were considered in relationship to measures of motivation and achievement, using causal modeling techniques. Results generally provided support for a causal model that links school culture to motivation and motivation to achievement, though the relative importance of school culture varied at different school levels. Additionally, the five culture dimensions (accomplishment, power, recognition, affiliation, and overall sense of school mission) varied in importance as predictors of motivation. (32 references) (Author/MLH)

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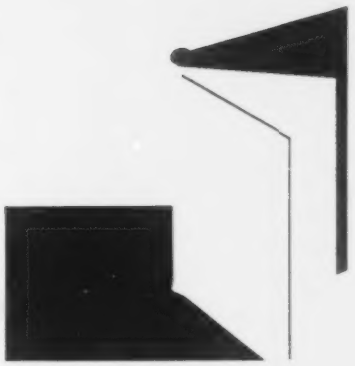

School "Culture," Motivation, and Achievement

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EA 022 608

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Project Report

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Abstract

Recent research on motivation and education has focused on the psychological environment of the classroom. Special consideration in this regard has been given to perceived stresses on goals, purposes and meanings of learning activities, and the relationships of these to motivation and achievement. The present study builds on this work, especially on the conceptualization of a psychological environment. Taking advantage of an extensive study of school achievement, conducted in association with a state-wide assessment program, over 16,000 students at 4 different grade levels in 820 schools were surveyed regarding their perceptions of school goal stresses ("school culture") with their responses considered in relationship to measures of motivation and achievement using causal modelling techniques. Results generally provided support for a school culture ----> motivation ----> achievement causal model although the relative importance of school culture varied at different school levels. Additionally, the five school culture dimensions varied in importance in the prediction of motivation.

School "Culture," Motivation, and Achievement

Recent research has focused especially on the role of the individual's perceptions and beliefs in mediating, guiding, and controlling motivation and achievement. In addition to looking at perceptions and beliefs about self (Harter & Connell, 1984; Schunk, 1989), researchers have increasingly considered the meaning that a given task has, especially the perceived purpose or goals that a person holds in performing the task (cf. Ames, 1987; Dweck, 1988; Nicholls, 1984). The origins of these perceptions are, of course, of considerable interest. In this regard, attention has not only been paid to the definition of a specific task, but increasingly to certain perceived characteristics of an environment, such as a classroom. Specifically, attention has been drawn to the possibility that as students perceive the classroom as stressing a certain purpose or goal in learning, they adopt a parallel orientation which affects achievement behavior. Thus, C. Ames (1987) and her colleagues (Ames & Archer, 1988) have shown that certain classrooms can be characterized

as differentially stressing "mastery" or "performance" goals. As students perceive a class setting as stressing a given goal, they tend to adopt and develop achievement behaviors in accord with this goal. In a classroom which stresses mastery, students have been found to hold mastery goals. Therewith, they persist longer when they encounter difficulty, use effective learning strategies, and exhibit high self-efficacy and adaptive motivational patterns in general. A contrasting pattern is exhibited in performance-oriented classrooms.

The purpose of the present study is to expand this line of inquiry from the analysis of classrooms to an analysis of a larger educational entity--the school. In this paper, we describe research focused on the school as a psychological environment that may influence student motivation and achievement. More specifically, we consider how the perceived stress within a school setting on certain goals and the meaning of achievement may affect the motivation and achievement of students.

As noted, considerable work has been done to show that the classroom is a psychological environment of

some significance, but there is a sense in which a larger organization, the school, is also a psychological entity which influences students' motivation and achievement: Students do have a perception of their school which has a set of characteristics distinguishing it from other schools. Most particularly, schools, like other organizations, have been shown to have different "climates" or "cultures" (For a review see Maehr & Fyans, 1989). In particular, schools appear to differ significantly in how they define achievement, what goals they stress, and the purpose and meaning they attach to what happens within their confines. The question that we pose in this study is: How do the perceived differential school stresses on purpose and goals relate to student motivation and achievement?

In attempting to answer this question, we build directly on recent work directed toward developing psychometric procedures for assessing that facet of the organizational culture that is likely to be related to motivation and achievement. The study of culture has characteristically been associated with naturalistic methodology in which a participant observer gathers

information on norms, perceptions, and meanings through face to face interviews, as well as through experiences had while being a part of the scene. The assessment of culture by using standardized tests, questionnaires, and other psychological instruments has not been commonplace and is, by some, rejected outright as inappropriate. Yet, there is a basis for such a psychometric approach to the assessment of culture in the work of Triandis (1972). Moreover, in developing guidelines for an assessment of organizational culture, one can refer to the extensive work on organizational climate (e.g., Campbell, Dunnette, Lawler, & Weick, 1970; Cook, Hepworth, Wall, & Warr, 1981; James & Jones, 1974; Lawler, Hall, & Oldham, 1974; Schneider & Snyder, 1975; Stern, 1970).

Building most directly on work associated with goal theory (Ames, 1987; Dweck, 1988; Maehr, 1989; Nicholls, 1984), Maehr & Braskamp (1986; Braskamp & Maehr, 1985) developed an instrument for assessing goal stresses within organizations. Briefly summarized, this instrument consists of four goal-related dimensions that may be, and often have been, associated with

achievement-related behavior in individuals, as well as organizations. It also includes an additional dimension concerned more broadly with the perceived purposiveness of the organization, its sense of direction, its "mission." An adaptation of this instrument for use in school settings (Krug, 1989) was employed in the present research. A description of the dimensions assessed and item examples are presented in Table 1. Certainly, we do not pretend that these dimensions embrace all that may or should be included in the concept of school culture. We would suggest that they appear to index students' perceptions of goals which the school stresses, goals that are likely to be associated with or affect achievement-related behavior. Therewith, significant features of what might be labeled the subjective culture Triandis (1972) are, arguably, assessed.

There is, additionally, some question as to how to treat these perceptions in the analysis of results. Conceptually, one can treat them in at least two different ways. These perceptions could be aggregated

Table 1

Dimensions of School "Psychological Environment" Assessed

Accomplishment

Emphasis on excellence and pursuit of academic challenges.

Item Example: This school makes me like to learn.

Power

Emphasis on interpersonal competition, socially comparative, achievement.

Item Example: At this school it is very important to get good grades.

Recognition

Emphasis on social recognition for achievement and the importance of schooling for attaining future goals and rewards.

Item Example: This school gives recognition for good performance.

Affiliation

Perceived sense of community, good interpersonal relations among teachers and students.

Item Example: Teachers at this school treat students with respect.

Overall Sense of Organizational Direction ("Mission")

The perception that the school knows what it is about and that students know what is expected.

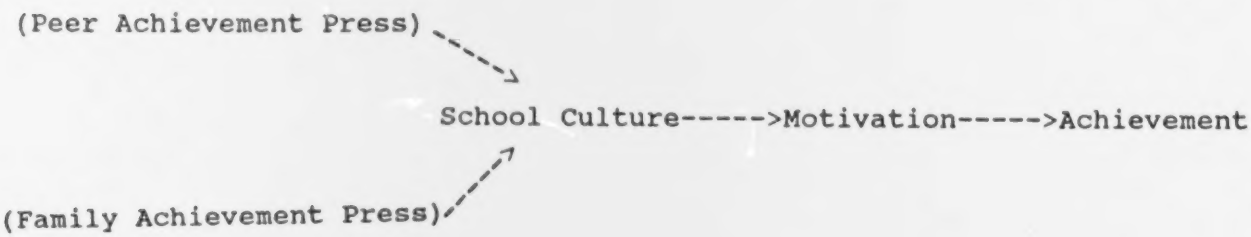
Item Example: Every student in this school knows what it stands for.

to construct an index of shared perceptions that could be used to distinguish groups and serve as a group variable. This possibly conforms more closely to the typical view of culture as a set of shared beliefs. On the other hand, one could pursue an approach increasingly common in the study of classroom environments (cf., e.g., Ames & Archer, 1988; Ryan & Grolnick, 1986). Following this approach, one could argue that, while these shared perceptions have value in describing a school as a holistic entity, the prediction of the behavior of individual students is best served by

focusing on the perceptions of school goal stresses as a generalized phenomenon, more or less shared by all the participants in the organization or as a psychological environment which exists uniquely for each child. Precedents for pursuing either approach are readily available. We accept both approaches as valid, depending on the goals held in conducting the research. For the present purposes, we will pursue the individualistic approach and refer to students' perceptions of school stresses as school culture perceptions--or briefly, as "school culture."

In summary, then, a first and major purpose of this study is to examine how students' perceptions of achievement-related stresses within their school setting relate to motivation and achievement that they exhibit. Incidental to analyzing the role of such perceptions of the school in relationship to motivation and school achievement, the comparative importance of two other psychological environments will also be considered. Specifically, data related to the achievement norms and expectations that students perceived to be extant in their peer and family groups were also gathered and

analyzed. These will be referred to as peer and family "achievement press." In brief, the purpose of the study is to examine the validity of the proposed causal sequence outlined below:



Additionally, consideration was given to variation in relationships at successive age/grade levels. It is reasonable to surmise that these three psychological environments might be differentially important for motivation and achievement at different levels of schooling.

Methods

Overview

In attempting to analyze whether the set of relationships noted above existed in a manner supportive of the hypothesized causal sequence, the authors employed a large data set established through a

state-wide assessment program. In the late 1980s, the Illinois State Board of Education decided to study a wide range of factors possibly associated with student achievement. A specific concern of this study was the relationship of school characteristics to student motivation and achievement. To this end, the authors designed a data-gathering plan to survey personal and contextual factors that might relate to student achievement. This inventory included a focus on school culture and motivation related to student achievement. Items commonly employed in the study of student motivation and achievement were employed. Items on school culture were adapted from recent research on organizational culture. Thus, a large data set was available to consider the relationships of school and student characteristics to motivation and achievement. Following is a more detailed description of those data.

Subjects/Sample

The sample consisted of 16,310 fourth-, sixth-, eighth-, and tenth-grade students, representative of students enrolled in Illinois public schools. These students were drawn from 820 public schools. All data

were gathered in conjunction with the state-wide school and student achievement assessment program.

Variables Assessed

Generally, the relationship of school culture/student perceptions, motivation, and achievement was considered at four different grade levels for students with diverse ethnic and socioeconomic backgrounds.

School culture. Survey items were adapted from previous research on organizational culture (Maehr, 1987; Maehr & Braskamp, 1986). These items are designed to assess the student perceptions of school goal stresses along five dimensions. These dimensions and item examples are presented in Table 1. Each item allowed for attitude responses on a five-point scale from "strongly disagree" to "strongly agree" with a scale of "0" for a "not sure" response. These "0" response choices were treated as missing data. However, very few students related "uncertain" as a response choice. As noted earlier, the student perceptions of the school culture were treated as individual perceptions of the goals and perceptions stressed by the

school, perhaps more closely approximating a consideration of the unique psychological environment existing for each student.

Analyses of the inter-item correlations revealed substantial covariation among the responses of the students. Subsequently, an unweighted least square factor analysis of the school culture items was conducted. This factor analysis was followed by a Promax oblique rotation. The reference vectors were used for interpretation. The results indicated that 40% of the response variance on the school culture items was accounted for by this unitary factor. Thus, where the number and complexity of the variables made it desirable to simplify the analyses (Study 1) we decided, for exploratory purposes, to treat school culture as a single dimension for each student by summing responses to these items.

Peer press. The perceived influence of the peer context toward educational achievement was assessed by responses to the item "doing well at school impresses my friends." This item obtained scaled scores of "0" for

"not sure" to 1 to 4 for "strongly disagree" and "strongly agree."

Family press. The perceived influence of the family context toward educational achievement was assessed by responses to the item "doing well at school impresses my parents or guardian." This item obtained scaled scores from "0" for "not sure" or 1 to 4 for "strongly disagree" to "strongly agree."

Motivation. Motivation was measured through a 12-item scale (Table 2). This scale was comprised of items adapted from questionnaires regularly employed to assess attributions of success and failure, sense of competence, perceived value of education, expectations of success, and continuing motivation. These items have not only been employed in a large number of studies appearing throughout the literature, but they have also been employed in previous waves of the state-wide testing program and have been subjected to extensive item analysis and tests of appropriate scaling (Fyans, 1983; Maehr & Fyans, 1989). The item intercorrelation was substantial. Further, an unweighted least squares factor analysis with the reference vectors derived from

Promax oblique rotation suggested that motivation, as assessed here, was appropriately to be treated as a single dimension. All the motivation items loaded on one factor which accounted for 92% of the variation in student responses. Thus, in conducting further analyses, the responses of each student to the motivation items were aggregated to obtain a total motivation score for each student (cf. Table 2).

Table 2

Description of Motivation Scale

Item Number		Factor Loading
1	Expectation of Success	.50
2	Attainment Value	.31
3	Attribution of Success (ability, effort, luck task)	.30
4	Minimal Acceptable Standard	.38
5	Sense of Competence	.45
6	Continuing Motivation	.39
7	Homework Effort	.29

Item Number		Factor Loading
	Future Academic Plans: (I plan to study each subject this number of years.....)	
8	English	.53
9	Mathematics	.66
10	Natural Science	.68
11	Foreign Language	.55
12	Social Science	.50

Achievement assessment. The students' achievement was measured by their responses to subtest items from the Metropolitan Achievement Test--Sixth Edition (1985). The subtests contained the mathematics, reading, and science items. The student responses to these national normed subtests were scored and then transformed to normal curve equivalents. Each student, thus, had a normal curve equivalent score for performance in mathematics, reading, and science, and this score was used in the analyses.

Data Analysis Plan

For purposes of presentation, the analysis of the results will be presented as three studies, each of

which focuses on a distinct feature of the results or on a particular set of analyses: Study 1 considers the question of the overall relationship between student perception, motivation, and achievement and presents data on these relationships at four different grade levels. Study 2 considers the multidimensionality of school culture. Analyses are conducted which analyze how the five dimensions of the school culture scale relate differentially to motivation and achievement. Study 3 considers the curriculum in which the student is enrolled (e.g., college prep). Do those in different curricula perceive the school environment differently? Do they perhaps experience a different school culture? Does student academic/vocational orientation interact with school culture in predicting motivation?

Study 1

Perceptions of School Family and Peers: Relationships to Motivation and Achievement at Grades 4, 6, 8, and 10

The purpose of Study 1 is to explore the validity of a proposed causal path in which student perceptions of school goal stresses (school culture) lead to

motivation, which in turn leads to achievement. In addition, the comparative relationships of peer and family press were considered. A series of multivariate analyses were conducted to determine the relationships of the various psychological environment variables to each other as well as to the motivation and achievement variables. A parallel set of analyses was conducted for each grade level.

In the case of 6th-, 8th-, and 10th-grade students, the results of the path analyses provided strong evidence in support of the school culture----->motivation----->achievement model (see Figure 1). The alternative model, namely that achievement causes motivation, was tested, but the data provided no support for that particular causal sequence. It appears, then, that students at the 6th, 8th, and 10th grades not only perceive varying achievement-related school goal stresses, but act in relationship to them.

It is also of interest to consider the relationships of peer and family press to motivation and achievement. At the 10th-grade level, peer press

Figure 1. Portrayal of path analysis at 6th, 8th, and 10th grades.

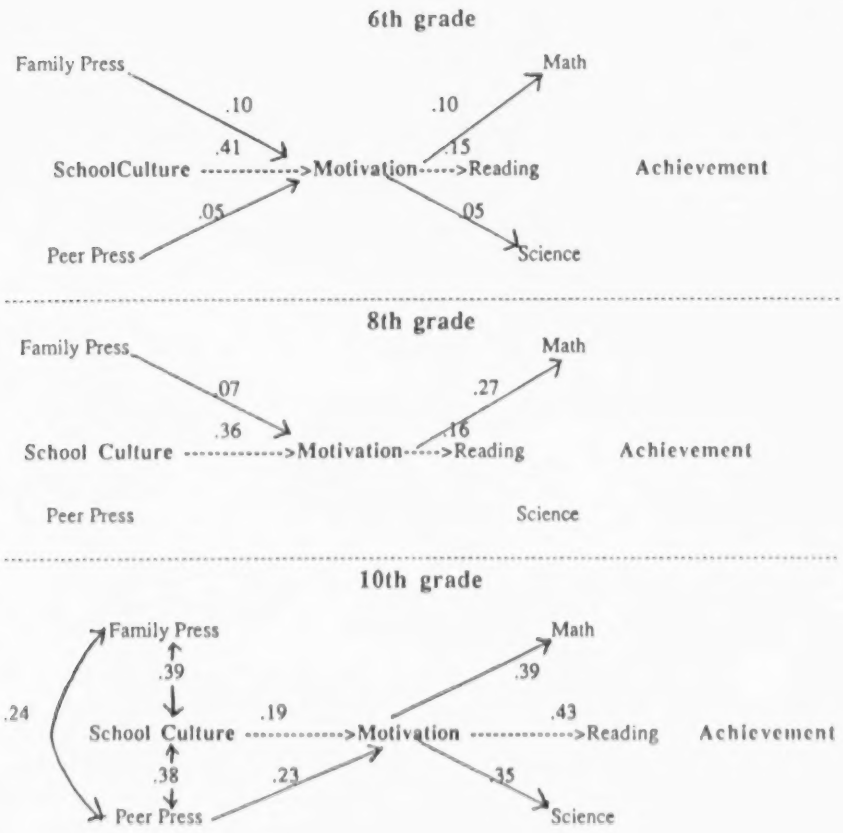


Figure 1. Portrayal of Path Analyses at 6th, 8th, and 10th Grades

(Note: The numbers along the arrows represent standardized regression coefficients.)

appears to have an indirect influence on achievement, one that is mediated through motivation. Note additionally that this social environment variable relates to school culture, but not directly to achievement. Family achievement press, however, does not relate significantly either to motivation or to achievement. At the 8th-grade level, press is a minor, and peer press a nonexistent, factor in the causal model. Similarly, at the 6th-grade level both family and peer press are relatively minor variables in the causal model. But school culture does relate rather strongly to motivation.

While the situation in the case of the 4th grade is, again, somewhat more complex, there is some basis for asserting the larger importance of family influence on both motivation and achievement (Figure 2). One might note also the relatively high degree of consonance of school culture with peer and family press. Moreover, whereas school culture appears to affect school achievement by influencing motivation at Grades 6, 8, and 10, at Grade 4, school culture operates, to some degree,

Figure 2. Portrayal of path analysis (4th grade).

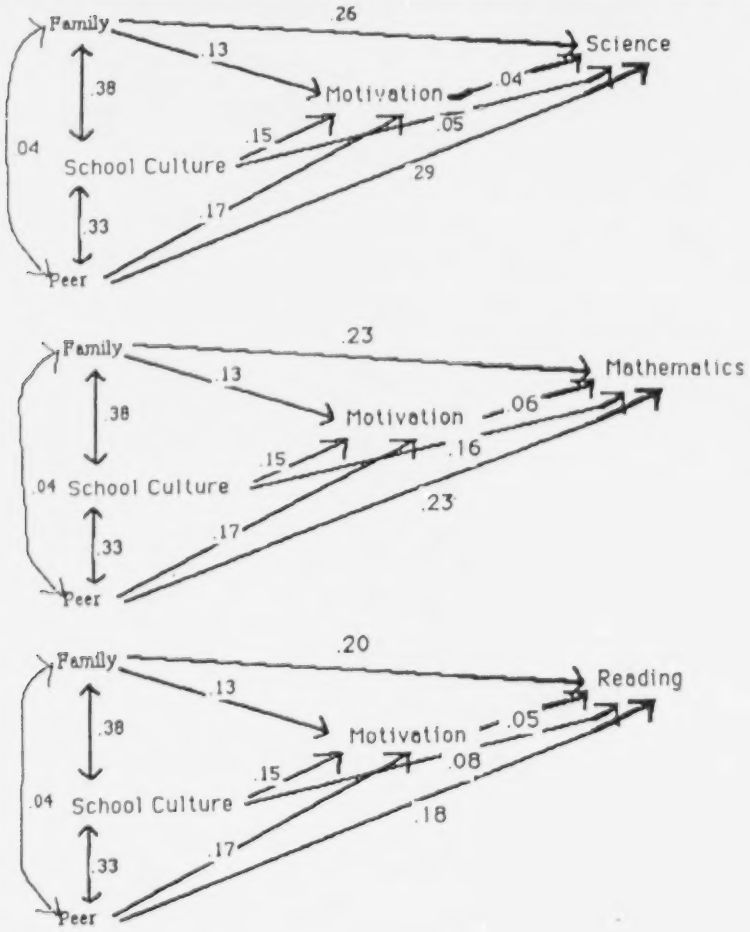


Figure 2. Portrayal of Path Analysis (4th grade)

(Note: Numbers along the arrows represent standardized regression coefficients.)

directly on school achievement. The mediating role of motivation is less clearly defined.

In sum, evidence for the existence of a causal chain leading from school culture through motivation to achievement is revealed in 6th-, 8th-, and 10th-grade results. The picture at the 4th-grade level is a complex one. The influence of family is strongest at the 4th-grade level with school culture and individual student motivation emerging as the predominant factors in school achievement thereafter. Peer press appears to be integrated with school culture in influencing student motivation at the 10th-grade level. Family press and peer press seem to operate somewhat independently of school culture at the 6th- and 8th-grade levels. While there is some basis for suggesting that family press, peer press, and school culture are closely integrated at the 4th-grade level, the set of causal paths indicate that motivation does not play the distinct mediating role that it plays at the 6th, 8th, and 10th grades.

Aside from these general comments on the nature and implications of the results, it is important to reemphasize that this research represents a preliminary

attempt to determine the validity of a set of hypotheses regarding psychological environments in general and school-related environments in particular. However, as a preliminary study, it necessarily glosses over some of the subtleties of psychological environments, as well as motivation and school achievement. For example, it seemed defensible, certainly at this stage of our understanding, to treat school culture as a single dimension, even though that oversimplifies the matter considerably. Our own choice of items was based on previous theory and research that indicated a multidimensional concept of school culture. Although a factor analysis indicated justification for proceeding with a unidimensional definition of organizational culture, we must re-assert the need to continue to explore the multifaceted nature of psychological environments. Might, for example, different stresses within the perceived environment relate to different facets of motivation and eventuate in varied school outcomes?

Such a question has merit. The present study must be complemented by studies that pursue lines of inquiry

of this nature. In fact, this question anticipates Study 2 where such a line of inquiry was begun.

Study 2

Dimensions of School Culture: Relationships to Motivation and Achievement

Study 1 led to several basic conclusions. First, individual student motivation is a critical mediating variable so far as school achievement is concerned. It makes a contribution independent of family background. Indeed, in the case of 6th, 8th, and 10th graders, at least, it outweighs this factor, a factor that has always been thought to be of overwhelming significance. A second finding of significance relates to the effects of school culture on motivation and, subsequently, on achievement.

In sum, the first study has established an argument for the importance of student perceptions of school goal stresses. Further, these results perhaps suggest the relevance of considering facets of school culture as antecedent to motivation and academic achievement. The purpose of Study 2 is to understand the nature of this

collection of school perceptions a bit better. In particular, the plan is to analyze the differential effects of the varying dimensions of school culture on student motivation and achievement.

In Study 1, the school environment variable was essentially employed as a unidimensional factor. Essentially, the psychological environment of the school was indexed as "good" or "bad" so far as facilitating motivation and school achievement is concerned. Yet, theory (cf. Maehr, 1987; Maehr & Braskamp, 1986) and a closer look at the data indicated that one could consider various dimensions of school psychological environments which, while generally related to each other and to overall school motivation and achievement, might have differential effects in certain instances. Thus, there is reason to explore possible differential effects of these dimensions.

In Study 2, then, we proceeded to consider the psychological environment of the school along five dimensions, as originally proposed by the theory of personal investment. While these five dimensions are clearly not unrelated, there may be some basis for

considering them separately at this exploratory stage. The basic question at issue in the analyses associated with Study 2 is: How do each of these dimensions contribute to the overall relationship found between school environment and student motivation in Study 1?

Table 3

Summary of Multiple Regression Results: Dimensions of School Culture Across Four Grade Levels.

	4th gr.	6th gr.	8th gr.	10th gr.
Accomplishment	.16*	.18	.24	.31
Power	.07	.09	.10	.08
Recognition	.05	.09	.08	.14
Affiliation	-.002	.03	.01	.06
Mission	.09	.08	.08	.004
	R^2=7%	R^2=11%	R^2=14%	R^2=21%

(*Standardized beta weights.)

Multiple regression analyses were conducted in which each of the school culture dimensions served as the predictor variables and the summed motivation score was the criterion variable. The results of these

analyses are presented in Table 3. There it can be seen that in the prediction of motivation from school culture, the Accomplishment dimension is the most important at all four grade levels, and Affiliation is generally of least importance. Mission is not particularly important overall. At the 10th grade, it contributes virtually nothing to the prediction. Overall, Power and Recognition are of variable, but lesser, importance. It appears that the different goals play different roles. Therefore, in subsequent studies it should provide profitable to consider the separate importance of these five dimensions in understanding student motivation and achievement.

Study 3

Curriculum and "Culture"

Finally, we consider issues of subcultures within schools. In particular, we looked at the kind of subcultures that might exist at the high school level in association with curriculum enrollment of 10th-grade students in the sample. Two questions were considered.

First, does variation in school culture relate to motivation for students in different curricular areas?

The first question was answered by conducting a discriminant analysis in which five curricular areas were the discriminant variables and the dimensions of school culture served as predictors. The results of the discriminant analysis revealed a significant and strong canonical correlation ($R = .33$; $p < .0001$) among curricular group membership and school culture variables. The two functions derived in this analysis and the curricular group means on each function are presented in Table 4. A reading of Table 4 would suggest that students in the college prep program perceived a relatively high degree of school stress on Accomplishment and Recognition. Students in other programs, particularly the general and vocational technical (voc-tech) programs perceived a relatively low degree of stress on these dimensions. The curricular group means on the two functions also indicate that students in the business-commerce programs perceived a relatively high degree of stress on Power and Mission, but a relatively low stress on Affiliation. The voc-

tech and general groups, it will be noted, exhibit what appears to be a counter trend, particularly compared to that of the college prep group.

Table 4

Discriminant Analysis Among Curricular Groups of School Culture

School Culture Variables: Standardized Beta Weights

	Function I	Function II
Accomplishment	.62	.04
Power	.18	.32
Recognition	.47	.06
Affiliation	.19	-.79
Mission	-.22	.83

Curricular Group Means on Function

	Function I	Function II
College Preparatory	.28	-.02
Business/Commercial	-.01	.12
Vocational/Technical	-.28	-.04
General	-.41	-.04

A next question concerns how well the students' perceptions of school culture relate to their

motivation, especially when curricular study area is considered. To answer this question, the students' school culture perceptions were regressed on motivation separately for curricular groups. The results presented in Table 5 show a strong and consistent relationship of school culture to motivation regardless of curricular program. The most powerful cultural predictor of motivation across groups is Accomplishment. Recognition is second in predictive potency for motivation except in the case of voc-tech students, for whom Power is a better predictor of motivation.

Table 5

Regression of School Culture Dimensions on Motivation by Student Course of Study

(10th-grade students)

Dimension	College Prep.	Bus.	Voc/Tech	Gen.
Accomplishment	.29	.33	.31	.19
Power	.07	.08	.13	.05
Recognition	.12	.15	.07	.14
Dimension	College Prep.	Bus.	Voc/Tech	Gen.
Affiliation	.03	.01	.06	.04

Overall	-.03	-.01	.15	.10
R^2 (% of variance accounted for):	15%	20%	27%	15%

Overall, the results of Table 5 argue for a pervasive relationship between school culture upon motivation to achieve for all students. However, differential stresses within the culture(s) apparently have differential significance for students in different curricular areas.

General Discussion

In general, the present results provide evidence in support of the school culture----->motivation-----> school achievement causal model at the 6th-, 8th-, and 10th-grade levels. Fourth grade seems to represent a special situation, one which diverges somewhat from this general pattern. In addition to finding evidence in support of the overall causal framework proposed, the nature of the differences in the causal model at different ages is of interest. School culture appears to be of greatest importance at the 6th- and 8th-grade

levels with peers and family playing a noticeably lesser role. Family press seems to play its major role in the 4th grade, apparently complementing the role played by the school. But the role of the family is increasingly supplanted by the school in the 6th and 8th grades. Does this mean that the school, in fact, has greater power for good or bad so far as school achievement is concerned at these middle school years? One certainly can interpret these results in this fashion and such an interpretation carries important implications for policy. At the very least, the results underscore the importance, in general, of considering the effectiveness of middle schools. In particular, these results call attention to the culture, the psychological environment of these schools. Interestingly, recent and widely disseminated reports (e.g., Carnegie Council on Adolescent Development, 1989) have made a similar point. School culture is certainly not unimportant at the 10th-grade level. School culture together with peer press contribute importantly to motivation. However, perhaps the most interesting feature at this level is

the emergence of different school cultures that are associated with curriculum and probably family press.

The results also hold implications for certain theoretical and methodological issues. As noted at the outset, there is a growing body of evidence (see, e.g., Ames, 1987) that the psychological environments of smaller groups, such as the classroom, are crucial in affecting motivation and achievement. The present results underscore the possibility of thinking of a larger entity, the school, as likewise presenting a psychological environment--one that is potentially important for student motivation and achievement. Of course, this suggestion has been voiced before; in some quarters it has been taken for granted as an established principle in understanding and administering organizations (Duignan, 1986; Schein, 1985). However, before these results are taken as mere confirmation of what is already known, if not self-evident, several observations are warranted.

True, discussions of organizational culture in general and school culture in particular characteristically suggest that variations in school

culture make a difference. Indeed, it is often suggested that school culture is an antecedent of student motivation and achievement. Our review of the literature, however, would suggest that most of what has been said about organizational culture in general and school culture in particular has severe limitations. Intersubjectively confirmable observations of organizational culture have produced qualitative descriptions by one person. These descriptions can and do vary drastically from researcher to researcher in their level of specification and degree of insight. Such descriptions can be useful in a number of different ways, but they are subject to certain limitations. As observations by one individual, their replicability and, hence, their reliability and validity, are open to question. Such qualitative descriptions are only with difficulty related to antecedents and consequences. Finally, qualitative descriptions do not provide any readily available technology to the practitioner (e.g., a school principal) in gaining insight into the nature of the school environment. If the psychological environment of the school is important, how does the

instructional leader assess it? The present results suggest that a psychometric approach may prove fruitful, not only in studying school culture but also in putting knowledge about psychological environments to use. While the present procedures have their limitations, they clearly give basis for confidence that the approach taken in this regard has potential.

Not only do the results provide some justification for a particular approach in the study of school culture, but they may also hold implications for theory. First, it is of some significance that this research extends the implications of current research on motivation. Recent motivation research has given new meaning to the concept of goals in the study of motivation, showing how the perceived meaning or purpose of an activity drastically modifies motivational behavior in a quantitative as well as qualitative fashion (Ames & Ames, 1989). In this regard, recent research by Ames and her colleagues (Ames, 1987; Ames & Archer, 1988) has shown how the perceived goals of the classroom significantly modify the students' approach to learning. Thus, when a mastery (roughly comparable to

what is here termed Accomplishment) goal orientation is more salient than a performance (generally similar to what is referred to here as Power) goal orientation, students are likely to be more inclined toward academic challenge and learning for its own sake (Ames & Archer, 1988; Nicholls, Cheung, Lauer, & Patashnick, 1988). The present findings on the school organization as a whole do not render such a specific verdict on how goal profiles may affect the quality of motivation and achievement exhibited. But that, of course, is an interesting question. Clearly, in future studies of school culture, one ought to look beyond such educational outcomes as are assessed by achievement tests to consider a broader range of possibilities, including especially such outcomes as continuing motivation (Maehr, 1976); intellectual venturesomeness, curiosity, and creativity (Amabile, 1983; Archer, 1989).

Beyond this theoretical point, there is one more practical. If indeed, the motivation of children can be influenced by the psychological environment of the school, perhaps it is incumbent on motivational researchers to begin exploring who can affect this

environment and how they can do it. It is characteristically suggested than an important function of leadership is motivation (see, e.g., Landy, 1985); indeed, that may well be what visionary leadership, (see, e.g., Sashkin, 1988a & b, 1989) is about. However, it is not always clear how those in leadership roles can in fact affect motivation. One possibility is that leaders can motivate as they manage the organizational culture (see, e.g., Maehr, 1987). Perhaps these results give some credence to that possibility. Perhaps they contribute to a larger picture in which instructional leadership is tied to the kind of "culture building" which affects students' motivation and achievement.

Finally, it is important to stress one pervasive theme of this article: Significant and important aspects of school culture have been identified. The value of the present study rests, first of all, on the fact that interesting results about schools, motivation, and achievement have been obtained. Perhaps the greater value is that the present study represents an important step in making the study of organizational culture a

systematic and objective study linked to a body of theory. This study has operationalized culture in one way. That operationalization may seem too focused, or even appear to miss the point. However, the results of this study show that the operationalization works. A preliminary step has been taken in moving the concept of organizational culture beyond fad to fact.

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